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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,835	07/23/2001	Hiroyuki Tanaka	N36-134375M/TH	2206

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EXAMINER

VALENCIA, DANIEL E

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 10/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/909,835	TANAKA ET AL.
	Examiner	Art Unit
	Daniel E Valencia	2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-15 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 21 September 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____.
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Inventorship***

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-9, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Meadowcroft U.S. Patent No. 5,522,001. Refer to the appropriate drawings or parts of the

specification. Meadowcroft discloses an optical fiber coupled device and method of assembling the same with all the limitations of the abovementioned claims. Regarding claim 1, Meadowcroft discloses an optical module (fig 1, 3, and 4) comprising: an optical semiconductor element (48) sealed with a cap having an upper surface formed with a window (not labeled); at least one optical part (fig 4) confronted with the window; a housing (42) holding the optical part therein; and having an opened end face; and a connecting layer (43) directly connecting the upper surface of the cap (46) to the opened end face of the housing. Meadowcroft further discloses that the optical module has an outer dimension of the opened end face of the housing is equal to or smaller than an outer dimension of the upper surface of the cap (fig 4), as described in instant claim 2. With reference to claim 3, Meadowcroft discloses that the optical semiconductor element has a stem portion (not labeled) opposite from the upper surface of the cap, and an outer dimension of the opened end face of the housing is equal to or smaller than an outer dimension of the stem portion. Meadowcroft also discloses that the optical semiconductor element has a stem portion opposite from the upper surface of the cap, and the stem portion is distanced from the opened end face of the housing (fig 3 and 4), as explained in instant claim 4. Regarding claim 6, Meadowcroft discloses that the housing has a receptacle part adapted to receive a mating optical plug (col. 5, lines 40-60). Meadowcroft further discloses that the optical module includes a casing (39, 12, and 45), which at least partly covers the cap and the housing; and which extends across the connecting layer, as described in instant claim 7. Referring to claims 8 and 11, Meadowcroft discloses a sealing layer (44) filled in a clearance between the casing, and the connecting layer, the sealing layer being formed by a resin curable thermally (col. 5, lines 25-30). Meadowcroft further discloses an optical module in which an optical semiconductor

element of the cap sealing type is mounted on a housing to be aligned within an optical axis of at least one optical part contained within the housing (claim 1), wherein: an upper surface of a cap of said optical semiconductor element is bonded to an end face of said housing, as explained in instant claim 9.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 10, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meadowcroft in view of Irie U.S. Patent No. 6,354,747. Refer to the appropriate drawings or parts of the specification. Meadowcroft as applied above, discloses optical fiber coupled devices and a method of assembling the same, that teaches a majority of the claimed limitations of the present invention. Meadowcroft however; fails to teach the use of UV curable adhesive.

On the other hand, Irie discloses an optical module that teaches the limitations that the Meadowcroft reference fails to teach. Regarding claim 5, Irie discloses an optical module (fig 10C) with a majority of the limitations of the independent claim, wherein the connecting layer is formed by an adhesive curable by irradiation of ultraviolet rays (ref 450 and col. 2). Irie further discloses that his device aligns a lens (col. 2) and is adapted to receive and hold a ferrule of an optical plug, as described in instant claim 10, 12, and 14. Irie teaches that thermosetting resins and UV curable resins are equivalent in the art (col. 1, lines 55-bottom). Irie also suggests that

using UV curable adhesives is beneficial, because it firmly attaches the parts of the module, and then uniformly shrinks upon curing (col. 9, lines 10-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use UV curable resin in the device disclosed by Meadowcroft.

Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meadowcroft in view of Kim U.S. Patent No. 6,312,167. Refer to the appropriate drawings or parts of the specification. Meadowcroft as applied above, discloses optical fiber coupled devices and a method of assembling the same, that teaches a majority of the claimed limitations of the present invention. Meadowcroft however, fails to teach his device being used with a plurality of modules.

On the other hand, Kim discloses a light transmission module that teaches the limitation that the Meadowcroft reference fails to teach. Regarding claims 13 and 15, Kim discloses a plurality of optical modules (fig 2, 3, and 7) arrayed in juxtaposition and covered with a single common casing (110), each of the modules including an optical semiconductor element (col. 2) of a cap sealing type mounted on a housing (20) to be aligned with an optical axis of at least one optical part contained in the housing. Meadowcroft further discloses that his devices can use lenses (col. 1) and ferrules (col. 3, lines 50-bottom) disposed in the housing, also mentioned in claims 13 and 15. Kim teaches that it is advantageous to use a plurality of optical modules arrayed in juxtaposition, because it allows a plurality of optical and electrical signals to be transmitted in a parallel (col. 1, lines 50-bottom). Therefore, it would have been obvious to one

of ordinary skill in the art at the time the invention was made to use a plurality of the modules disclosed by Meadowcroft and array them in a juxtaposition in a common casing.

*Conclusion*

The prior art documents submitted by the applicant in the Information Disclosure Statement filed on May 16, 2002, have all been considered and made of record (note attached copy of form PTO-1449).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ishizaka U.S. Patent No. 5,751,877 discloses a semiconductor laser module.

Okochi U.S. Patent No. 5,737,465 discloses a module for optical communication.

Go U.S. Patent No. 5,347,604 discloses a transfer molding type manufacturing method of pigtail type optical module.

Bennett U.S. Patent No. 5,692,083 discloses an in-line unitary optical device mount and package therefore.

Michikoshi U.S. Patent No. 5,388,171 discloses a semiconductor laser module.

Kikuchi U.S. Patent No. 5,333,224 discloses a photoelectric converter connecting device.

Matsabura U.S. Patent No. 5,189,716 discloses a photosemiconductor and optical fiber welded module.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel E Valencia whose telephone number is (703)-305-4399. The examiner can normally be reached on Monday-Friday 9:30-6:00.

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The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-7724 for regular communications and (703)-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.

DV

Dan Valencia  
October 15, 2002

*John D. Lee*  
John D. Lee  
Primary Examiner